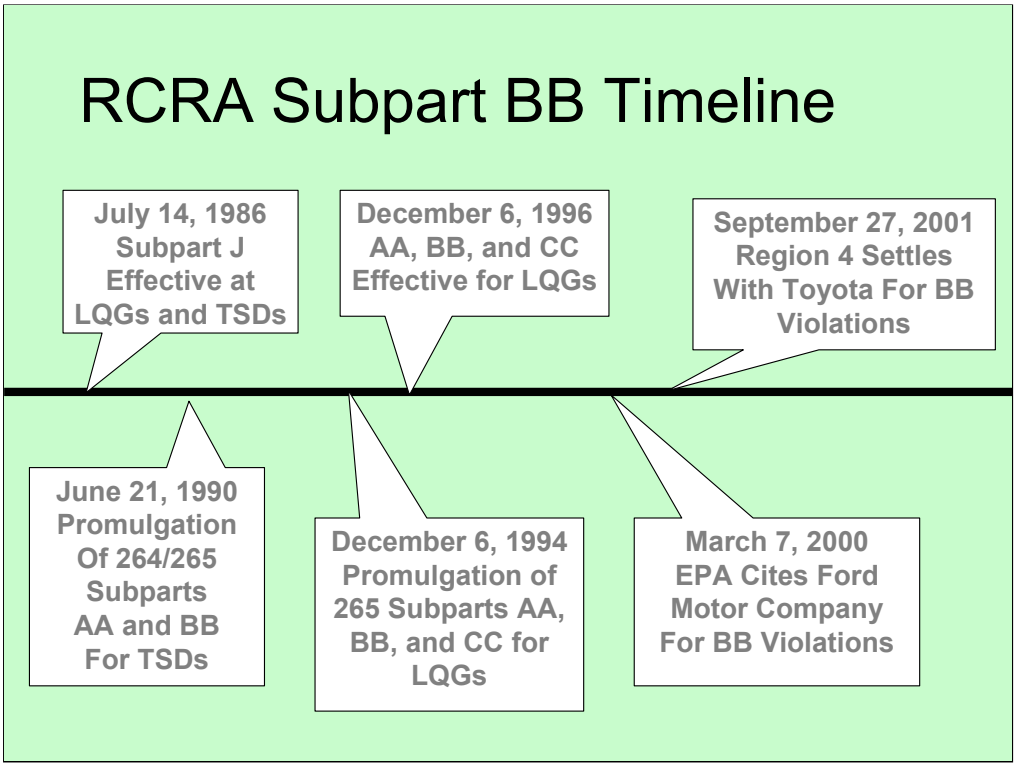
Subpart BB and the Automobile Industry

Hazardous Waste Generation

- Generation of hazardous waste purge solvent is between 4,000 and 6,000 gallons per week or
- 200,000 to 300,000 gallons of hazardous waste per year

Extremely large volumes of hazardous waste flow through these systems.



The purpose of this slide is to show:

1. The regulation has been around for some time.
2. The industry had two years to argue their point, gain clarification, and comply with the regulation.
3. EPA gave the industry three years to comply.

It should also be noted that from 1986 to the present, we have taken numerous enforcement actions at TSDs for subpart BB violations. The most memorable were the enforcement actions taken at the BIF facilities during the early 1990s.

Painting Process

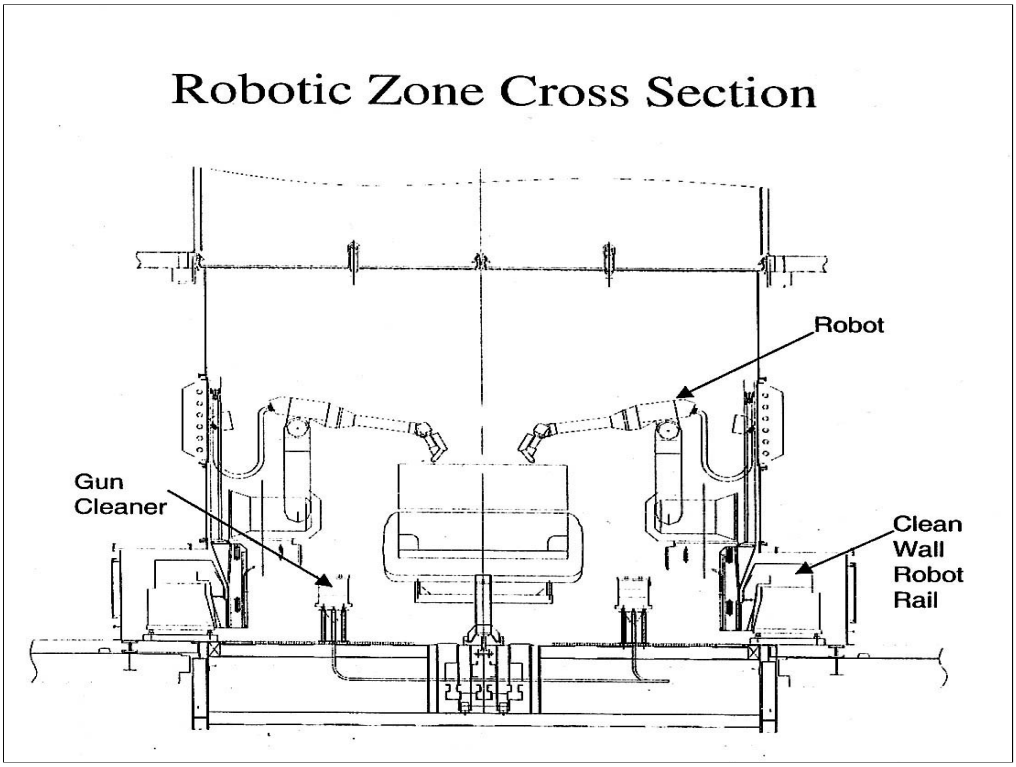
- Car bodies pass through cleaning and prep operations such as a phosphate bath
- Electro deposition coat (e-coat)
- Prime coat (waterborne or solvent)
- Base coat (usually waterborne)
- Clear or top coat (solvent)

This process may vary between facilities. Prime coat usually uses a solvent purge, base coat usually uses a water purge, and clear coat always uses a solvent purge.

Robotic Paint System

- Paint fed directly from paint kitchen or paint mix room
- Paint is expelled from a spinning “bell” on the end of each robotic arm
- Purge passes through bell to clean excess paint off the bell, remove paint residue, or clear coat
- Purge is used following a color change or at some programmed set time depending on the process or plant

May vary between facilities.



May vary between facilities.

Purge System Point of Generation

- Purge solvent becomes a hazardous waste once it has been used for its intended solvent purpose – remove excess paint, and clean the paint gun, nozzle, or bell
- Recirculation and any activity following the initial purge is merely a form of agitation
- Agitation is not reuse or recycling

1. July 29, 1987 letter (Cotsworth to Weller): Addresses Subpart J applicability to flow equalization tanks. Since the solvent is physically removed from the spray paint application unit, the used solvent is a waste. All associated piping is ancillary equipment subject to Subpart J and BB.

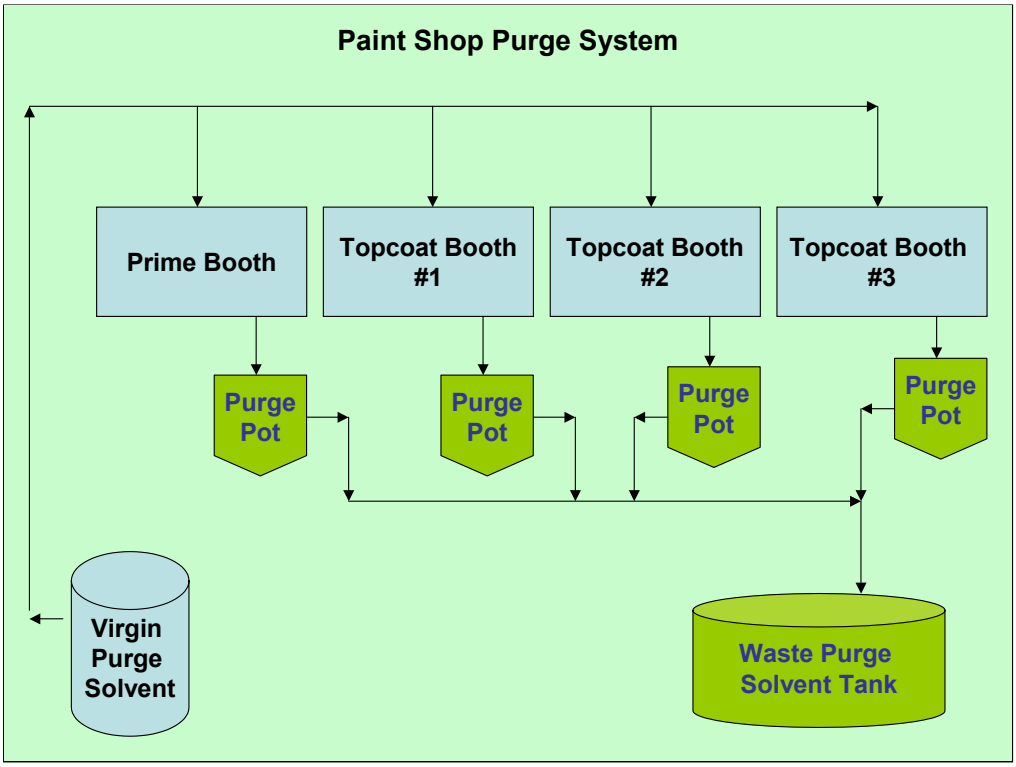
Purge System Cont.

- The purge solvent – paint mixture is a hazardous waste
- Any pipes, valves, pumps, etc. That are part of the discharge system following the paint spray guns are subject to subparts J and BB

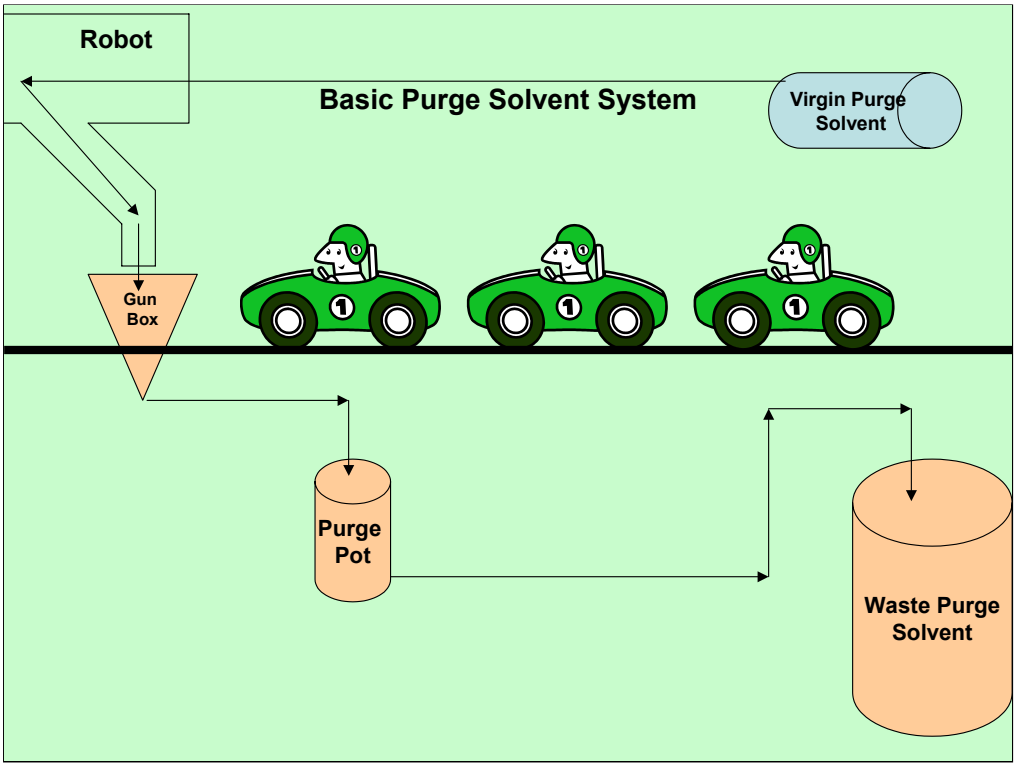
Types of Purge Systems

- Basic purge system gravity drains to a purge pot, then is pumped to the hazardous waste storage tank

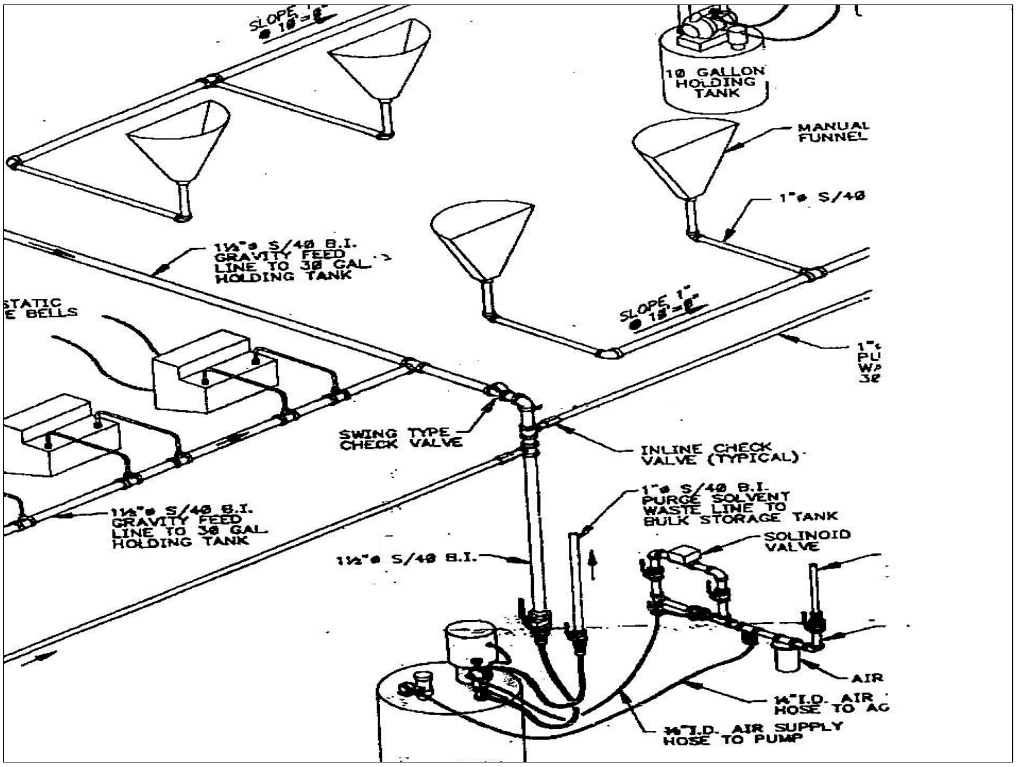
Basic system and most popular.



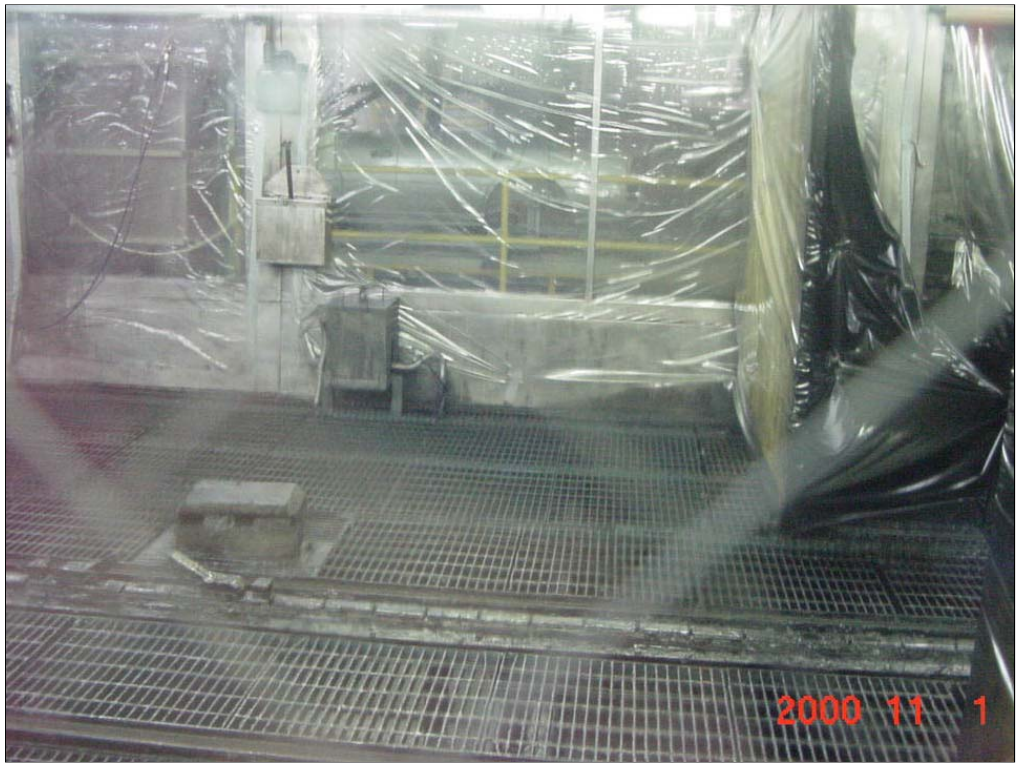
Top coat #1 could be a base coat not using solvent purge.



Usually paint without the driver.

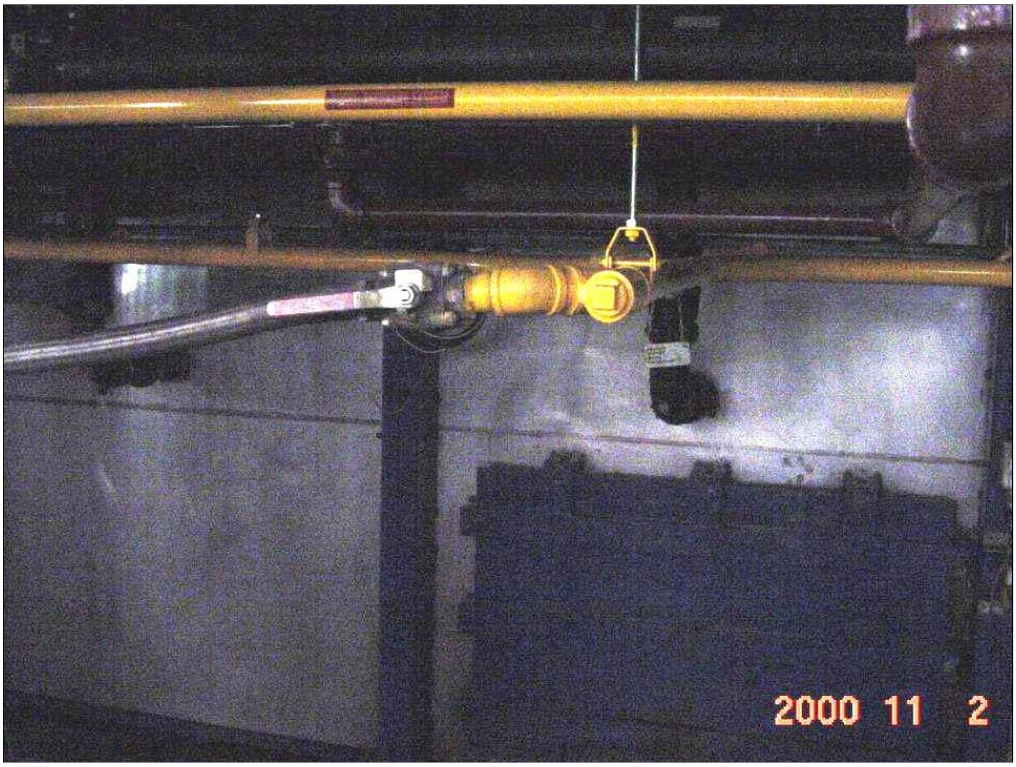


Don’t rely on the environmental manager to give you an explanation of the system. Also, verify that you are looking at the most recent description of the process. Conduct interviews of paint operators and maintenance personnel. Often the facility’s environmental personnel do not know the system or the changes that have been implemented.



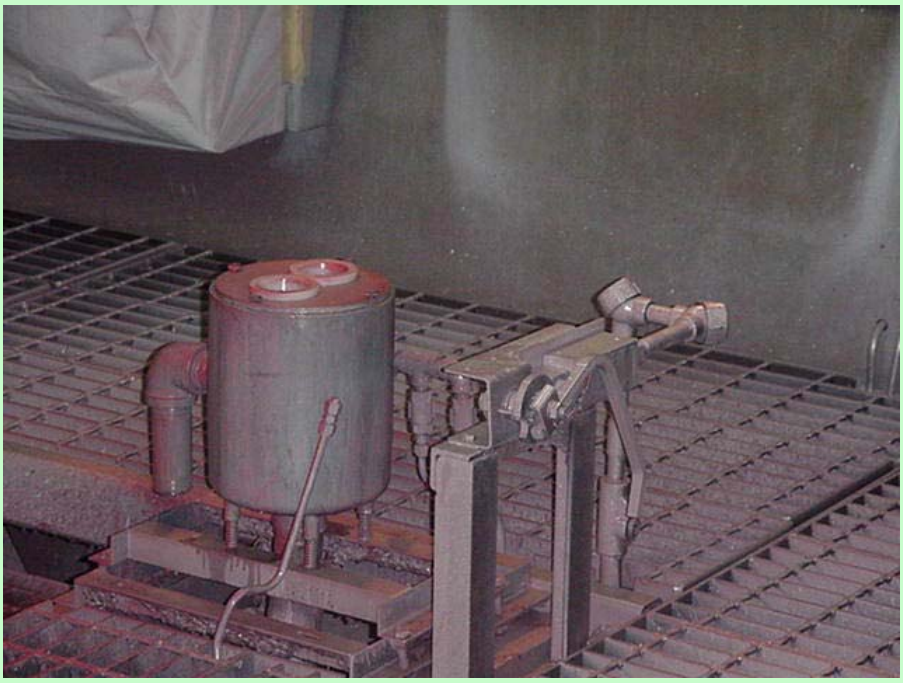
Manual purge pot across line. Water curtain flowing below grate.

Purge pot inside paint booth. Numerous lines include purge and air.



Gravity drain from paint booth. Flanges and valves present.

Flow equalization tank.



Gun box.

A leak!

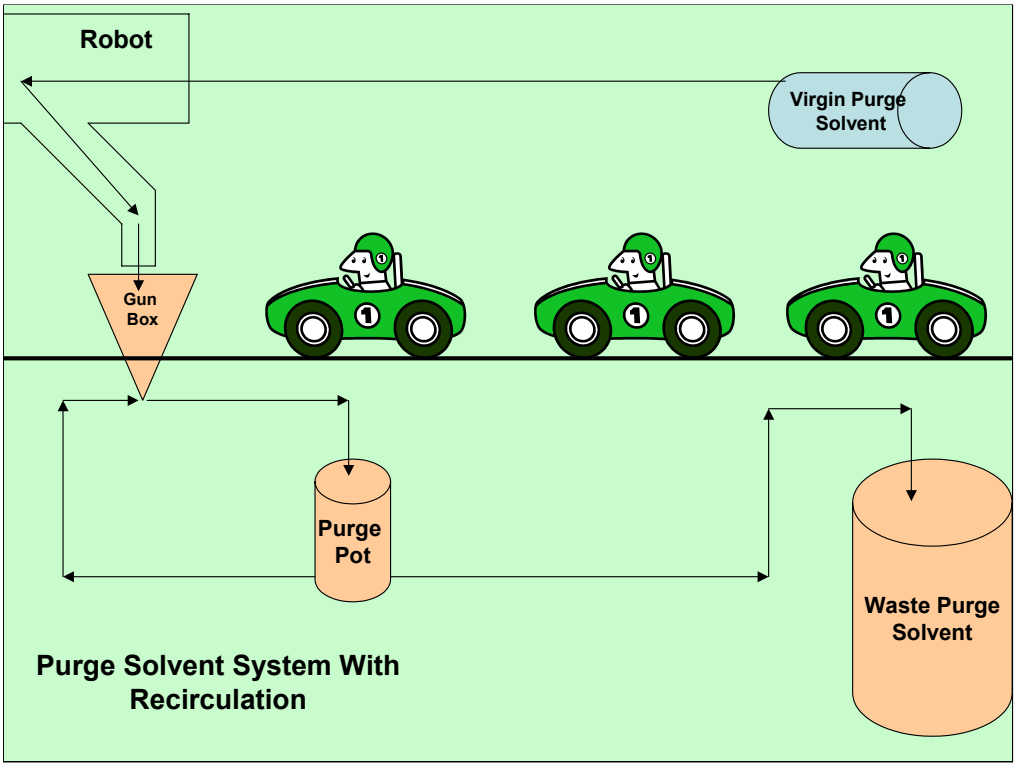
Odd setup for the flow equalization tank. Note the leak from the equalization tank to the hazardous waste tank.

Top of equalization tank. Conservation vent and pump.

Types of Purge Systems

- Recirculation from the purge pot back through the purge lines

Common, but does not necessary save purge. This system has caused problems at some facilities.


Robot
Virgin Purge Solvent
Gun Box
Purge Pot
Waste Purge Solvent
Purge Solvent System With Recirculation

Large flow equalization tank serving an entire paint line.

A messy flow equalization tank. Just several minor leaks. A Subpart J and BB program would have taken care of this.

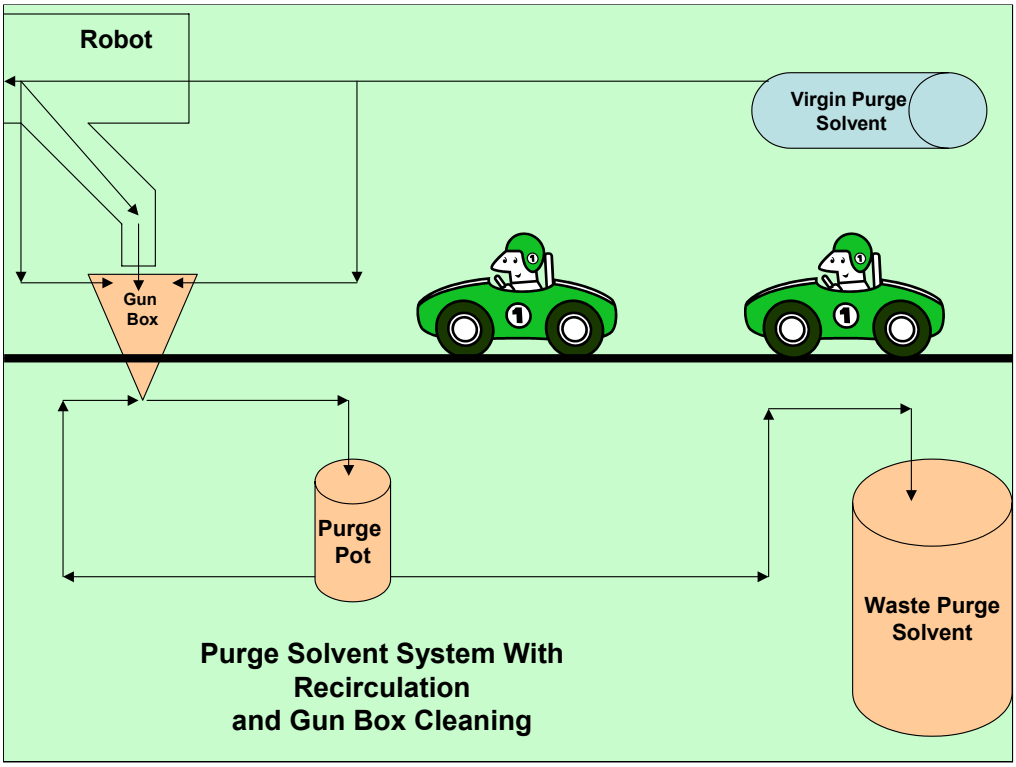
Another flow equalization tank. Overflow problems?

Equalization tank with circulation.

Types of Purge Systems

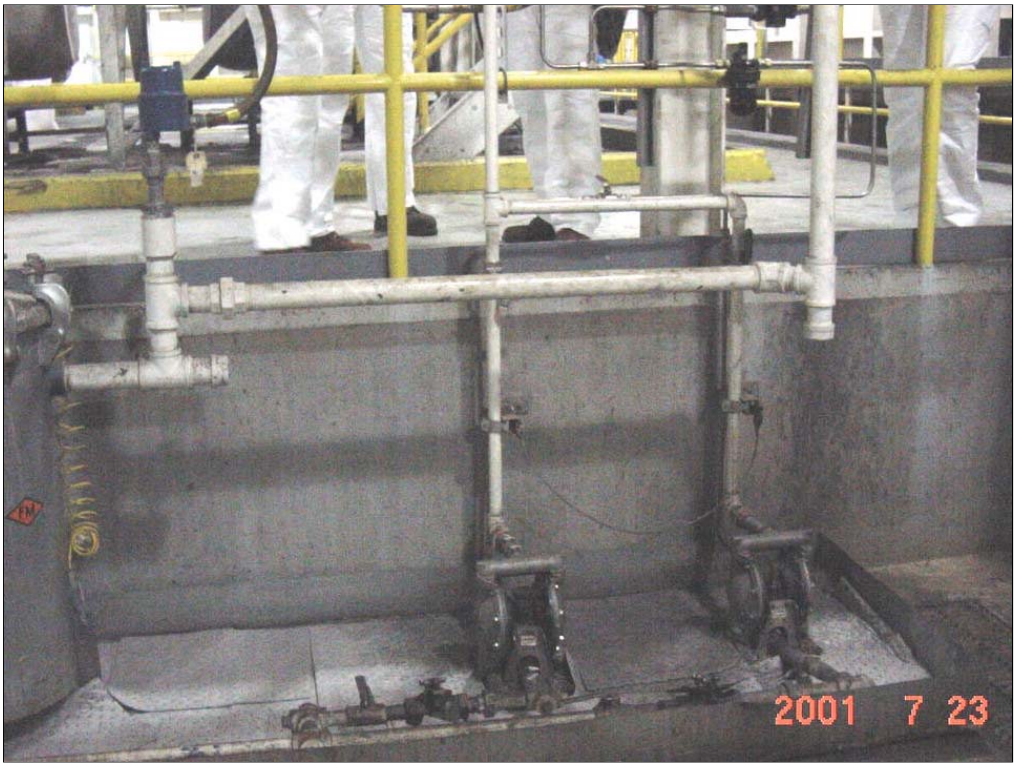
- Recirculation within the gun box and purge lines
- Additional virgin purge solvent sprayed onto the nozzle or bell

BMW facility is the only Region 4 facility that currently uses this process. Saturn recently changed their process.



Waste solvent flows only through the piping and not inside the gun box.

BMW flow equalization tank.



Piping and pumps.

Valves

Valves

Mix room tank. Hazardous waste flows into this tank when it reaches a certain level.

Piping to shipping container.

Piping to shipping container.

Front of shipping container.

Cost of Compliance

- Initial cost of subpart J - $ 1,600
- Initial cost of subpart BB - $ 11,358

- Annual cost of subpart J - $ 2,000
- Annual cost of subpart BB - $ 10,035

Numbers based on EPA – Toyota Settlement CAFO. Toyota is the largest automobile manufacturer. The cost of compliance is not as expensive as the facilities claim.

Cost of Compliance

- Total one-time cost: $ 12,958
- Total annual cost: $ 12,035

Not as expensive as the Auto Industry claims.